GEO Engineering

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October 23, 1989

M.A. Hanna Company
1301 East Ninth Street
Suite 3600
Cleveland, OH 44114-1824

ATTN: Richard E. Hahn

SUBJ: L.E. Carpenter, Wharton, New Jersey
1986 Administrative Consent Order
July through September 1989 Progress Report

Gentlemen:

Per Paragraph 35 of the 1986 Administrative Consent Order between L.E. Carpenter & Company and the New Jersey Department of Environmental Protection (NJDEP), the following progress report is submitted detailing the status of activities at the former L.E. Carpenter, Wharton facility. The report will include a discussion of product recovery activities and a summary of Remedial Investigation activities completed to date.

Product Recovery

On August 10, 1989, an SOS specific gravity skimmer system was installed at the site to replace the previous AUTO-SKIMMER system. The system is set up to recover product from MW-6, MW-7, and MW-10 simultaneously. As of September 30, 1989, 20 gallons of product had been recovered from the three wells. Recovery of product has been limited by early operational problems with the new system. These problems have been rectified by system adjustment and the system is now performing properly. Although the system has been set up at MW-7, there is little product to be recovered at that location. MW-11s, installed during the Remedial Investigation, contains floating product and the equipment at MW-7 will be moved to MW-11s in the near future to enhance the overall rate of product recovery at the site.

Previous to the SOS system start-up, the AUTO-SKIMMER recovered 50 gallons from MW-10. A total of 4334.3 gallons of product had been recovered at the L.E. Carpenter facility as of September 30, 1989.

Elevation contour maps for ground water and top of floating solvent across the site have been prepared for July, August and September 1989. In addition, solvent thickness isopach maps have been prepared for the three months. All of the figures are attached at the rear of the report. Elevations of groundwater, floating solvent and four surface water locations are summarized in a table preceding each month's figures. The table also includes product thickness measured in monitor wells across the site.

On August 18, 1989, groundwater samples were collected at MW-1, MW-2, MW-4 and MW-5. MW-3 was sampled on September 22, 1989. This delay was due to vandalism which necessitated ordering and reconstructing the sampling device in MW-3. Enseco/Erco Laboratories of Cambridge, Massachusetts, was contracted for the analytical work. The results of laboratory QA/QC documentation are attached.

Remedial Investigation Activity Summary

To date, the following Remedial Investigation (RI) activities have been completed at the site:

- Soil gas survey and evaluation of its results.
- Test pit and soil sampling program, including additional test pits added as a result of the soil gas survey.
- Hand auger soil sampling.
- Surface water and stream sediment sampling.
- Monthly air sampling (commenced in February 1989).
- Monitor well/piezometer installation and development.
- Site location and elevation survey.
- Groundwater sampling (except the MW-14 cluster wells, which are to be sampled in mid-October).
- Aquifer testing and water level measurements.

At present, all of the analytical data, except for groundwater samples, has been received and is being reviewed for compliance with Tier I requirements. Analysis of aquifer testing data, water level data and laboratory testing data is also underway at this time. Although we expect to have all the laboratory analytical data in time to include in the Draft RI Report, if the laboratory is delayed in reporting the MW-14 cluster groundwater testing results, we will submit the

analytical reports as an addendum to the Draft RI Report subsequent to its submittal. The second round of groundwater sampling will be conducted subsequent to the NJDEP review of and comments on the Draft RI Report.

As agreed upon in the February meeting with the NJDEP, we expect to complete the Draft Remedial Investigation Report by the end of November 1989. Included in that report will be the results of all analyses, including laboratory data sheets and QA/QC documentation, summary tables of analytical data, stratigraphic logs, well construction details, monitor well elevations, water table elevations and relevant support data. In addition, the report will include a site map showing property boundaries, surface water features, topography, utilities, tanks and associated underground piping, and site structures. Additional maps will show the locations of monitor wells, test pit locations, hand auger sample locations, groundwater elevation contours, groundwater quality contours and soil quality contours. The report will include a discussion of the direction and rate of groundwater and contaminant flow. The extent and fate of soil, surface water, ground water and air pollution, both on and off-site, will also be discussed. A risk assessment will be prepared that identifies human receptors in the paths of pollution migration, pollutant mobility, toxicology of critical pollutants, and migration potential and environmental fate of each pollutant. The report will conclude with recommendations regarding additional phases of investigation.

Please call if you have any questions pertaining to the above.

Sincerely,

GEOENGINEERING, INC.

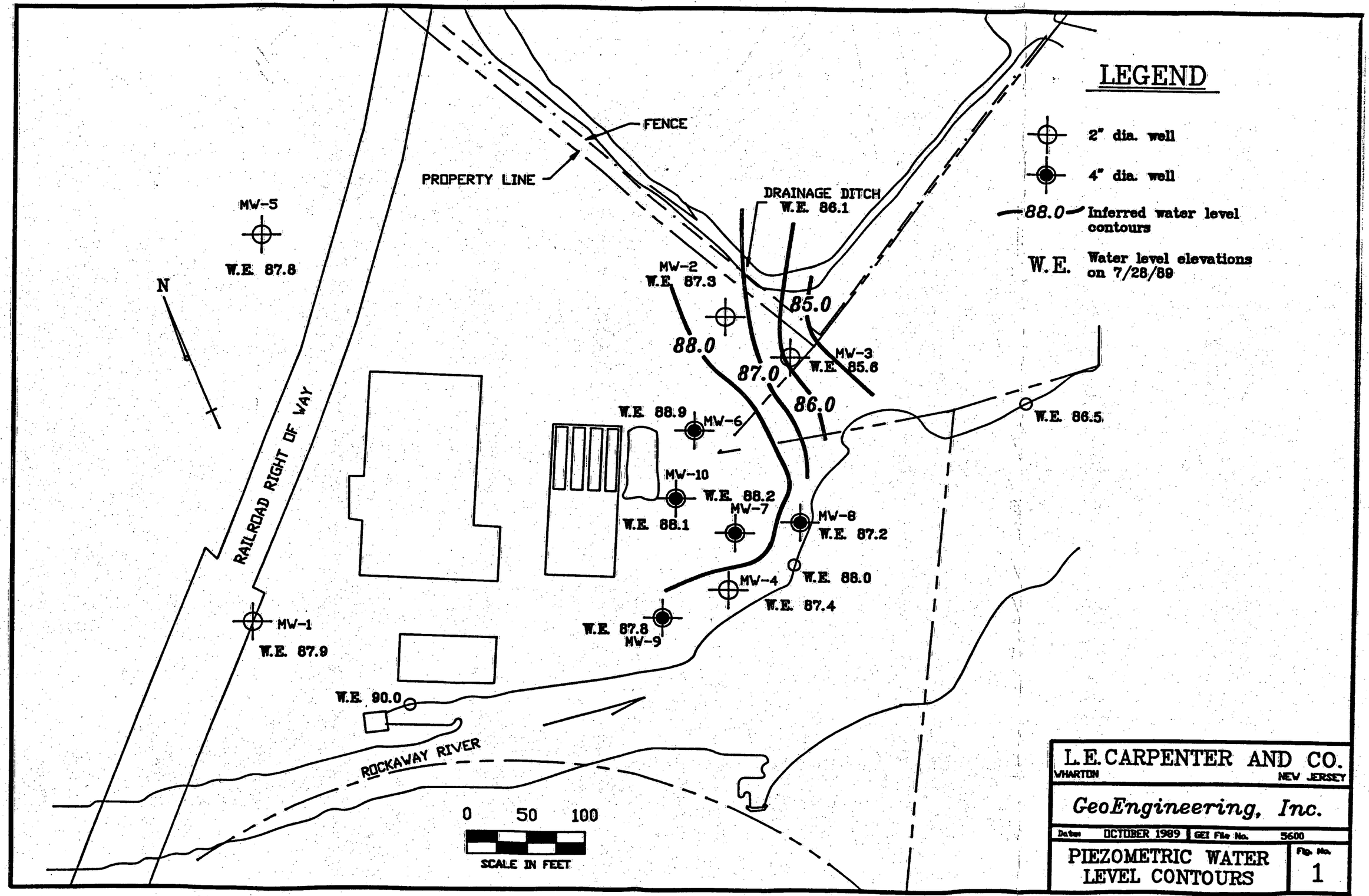
William W. Dunnell IV
Project Manager

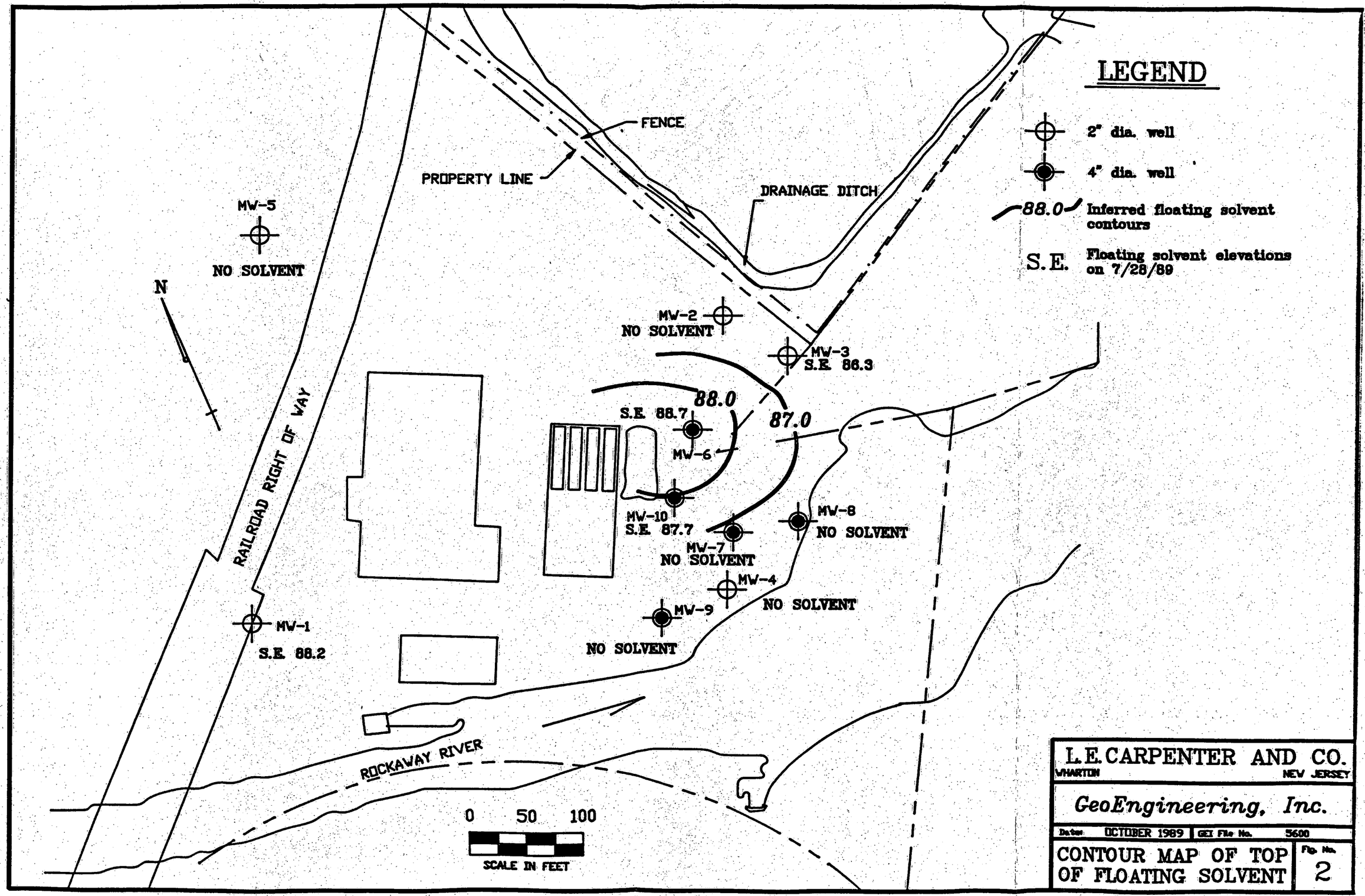
WWD/avm
enclosures
cc T. Schwartz (5)

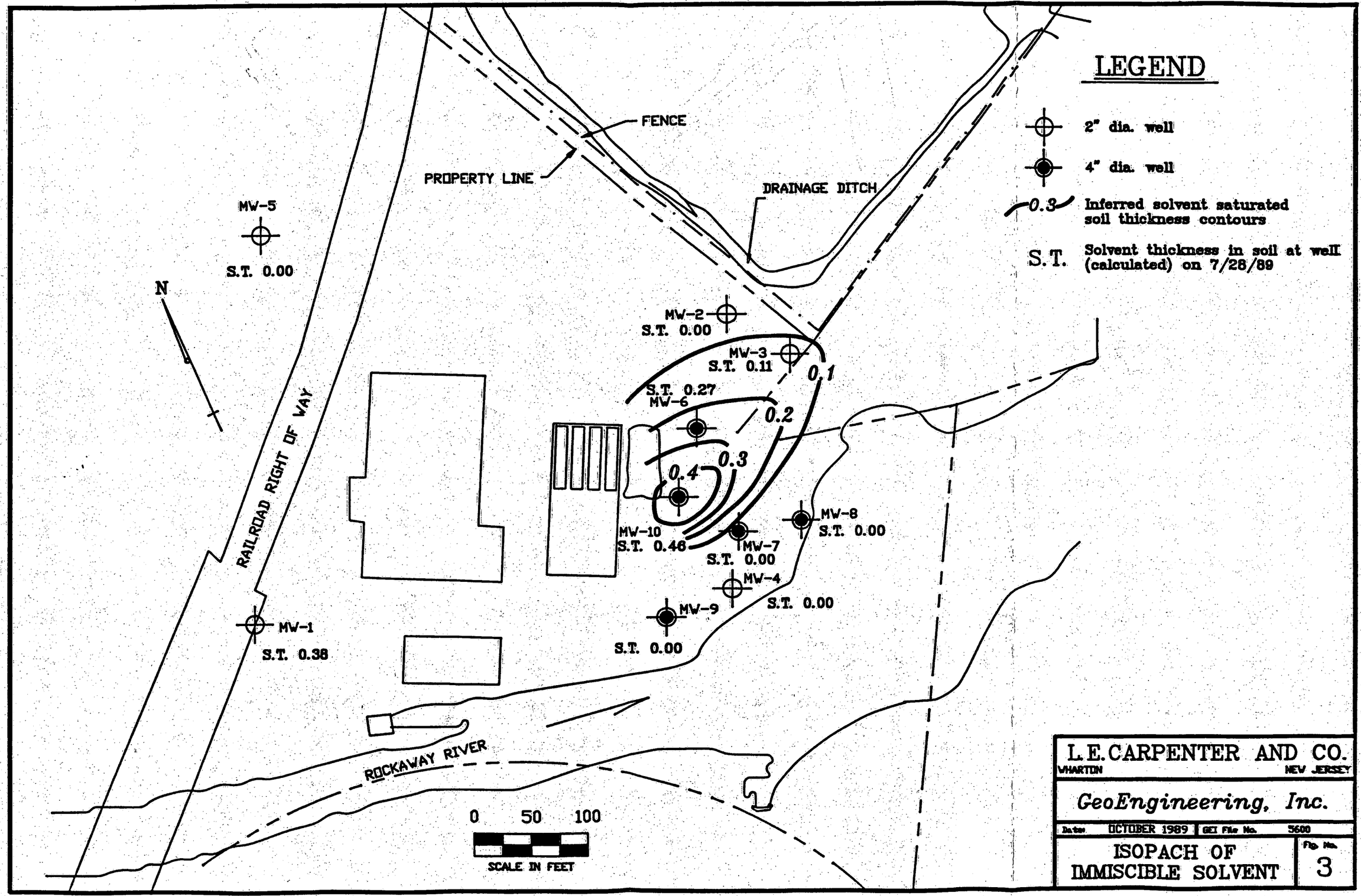
TABLE A: SOLVENT THICKNESS AND PIEZOMETRIC ELEVATIONS ON 7/28/89

WELL NO.	PIEZOMETRIC SURFACE ELEVATION (feet above MSL)	FLOATING SOLVENT SURFACE ELEVATION (feet above MSL)	MEASURED SOLVENT THICKNESS IN MONITORING WELL (feet)	CALCULATED FLOATING SOLVENT THICKNESS (feet)
1	87.9 (1)	88.2	2.53	0.38
2	87.3 (3)	no solvent	0.00	0.00
3	85.6 (1)	86.3	0.75	0.11
4	87.4 (3)	no solvent	0.00	0.00
5	87.8 (3)	no solvent	0.00	0.00
6	88.9 (2)	88.7	1.80	0.27
7	88.2 (2)	no solvent	0.00	0.00
8	87.2 (3)	no solvent	0.00	0.00
9	87.8 (3)	no solvent	0.00	0.00
10	88.1 (2)	87.7	3.10	0.46
DRAINAGE DITCH	86.1			
RIVER PT.	90.0			
RIVER PT.	88.0			
RIVER PT.	86.5			

N O T E S (1) Depth to water measured inside GEOMON Groundwater Sampler/Piezometer (inlet screen is below solvent level)
(2) Calculated piezometric surface, assuming solvent specific gravity is 0.87.
(3) No solvent observed in monitoring well


LEGEND
2" dia. well
4" dia. well
88.0 Inferred water level contours
W.E. Water level elevations on 7/28/89
FENCE
PROPERTY LINE
DRAINAGE DITCH
W.E. 86.1
MW-5
W.E. 87.8
MW-2
W.E. 87.3
85.0
88.0
87.0
86.0
MW-3
W.E. 85.6
W.E. 86.5
W.E. 88.9
MW-6
MW-10
W.E. 88.2
W.E. 88.1
MW-7
MW-8
W.E. 87.2
MW-4
W.E. 88.0
W.E. 87.4
W.E. 87.8
MW-9
MW-1
W.E. 87.9
W.E. 90.0
N
RAILROAD RIGHT OF WAY
ROCKAWAY RIVER
0 50 100
SCALE IN FEET
L.E. CARPENTER AND CO.
WHARTON NEW JERSEY
GeoEngineering, Inc.
Date: OCTOBER 1989
GEI File No. 3600
PIEZOMETRIC WATER LEVEL CONTOURS
Fig. No. 1


FENCE
PROPERTY LINE
DRAINAGE DITCH
MW-5
NO SOLVENT
N
MW-2
NO SOLVENT
MW-3
S.E. 86.3
88.0
87.0
S.E. 88.7
MW-6
MW-10
S.E. 87.7
MW-7
NO SOLVENT
MW-8
NO SOLVENT
MW-4
NO SOLVENT
MW-9
NO SOLVENT
MW-1
S.E. 88.2
RAILROAD RIGHT OF WAY
ROCKAWAY RIVER
0 50 100
SCALE IN FEET
LEGEND
2" dia. well
4" dia. well
88.0 Inferred floating solvent contours
S.E. Floating solvent elevations on 7/28/89
L.E. CARPENTER AND CO.
WHARTON NEW JERSEY
GeoEngineering, Inc.
Date: OCTOBER 1989
GEI File No. 5600
CONTOUR MAP OF TOP OF FLOATING SOLVENT
Fig. No. 2



L. E. CARPENTER AND CO.
WHARTON NEW JERSEY

GeoEngineering, Inc.

Date: OCTOBER 1989 | GEI File No. 5600

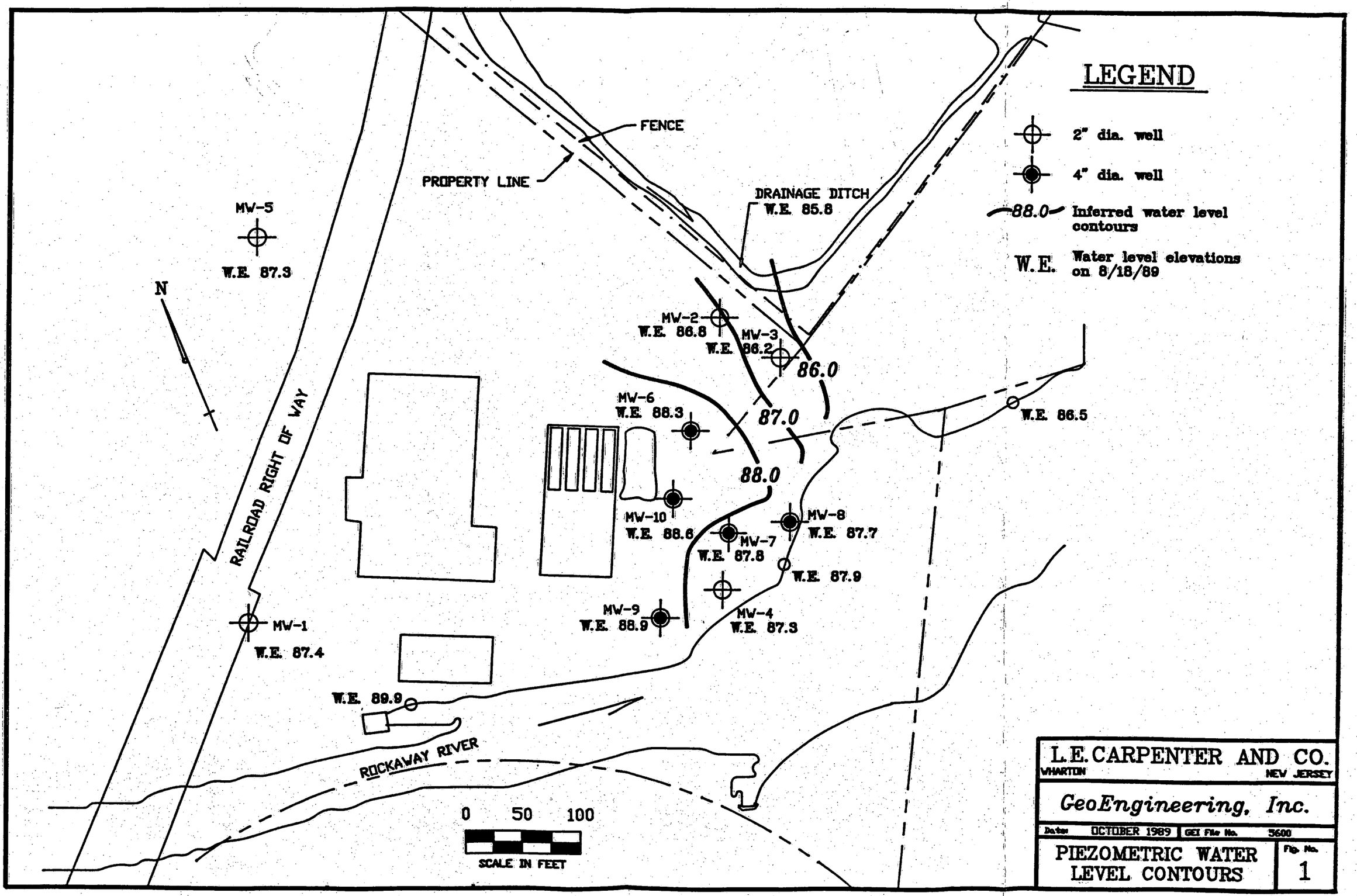
ISOPACH OF IMMISCIBLE SOLVENT

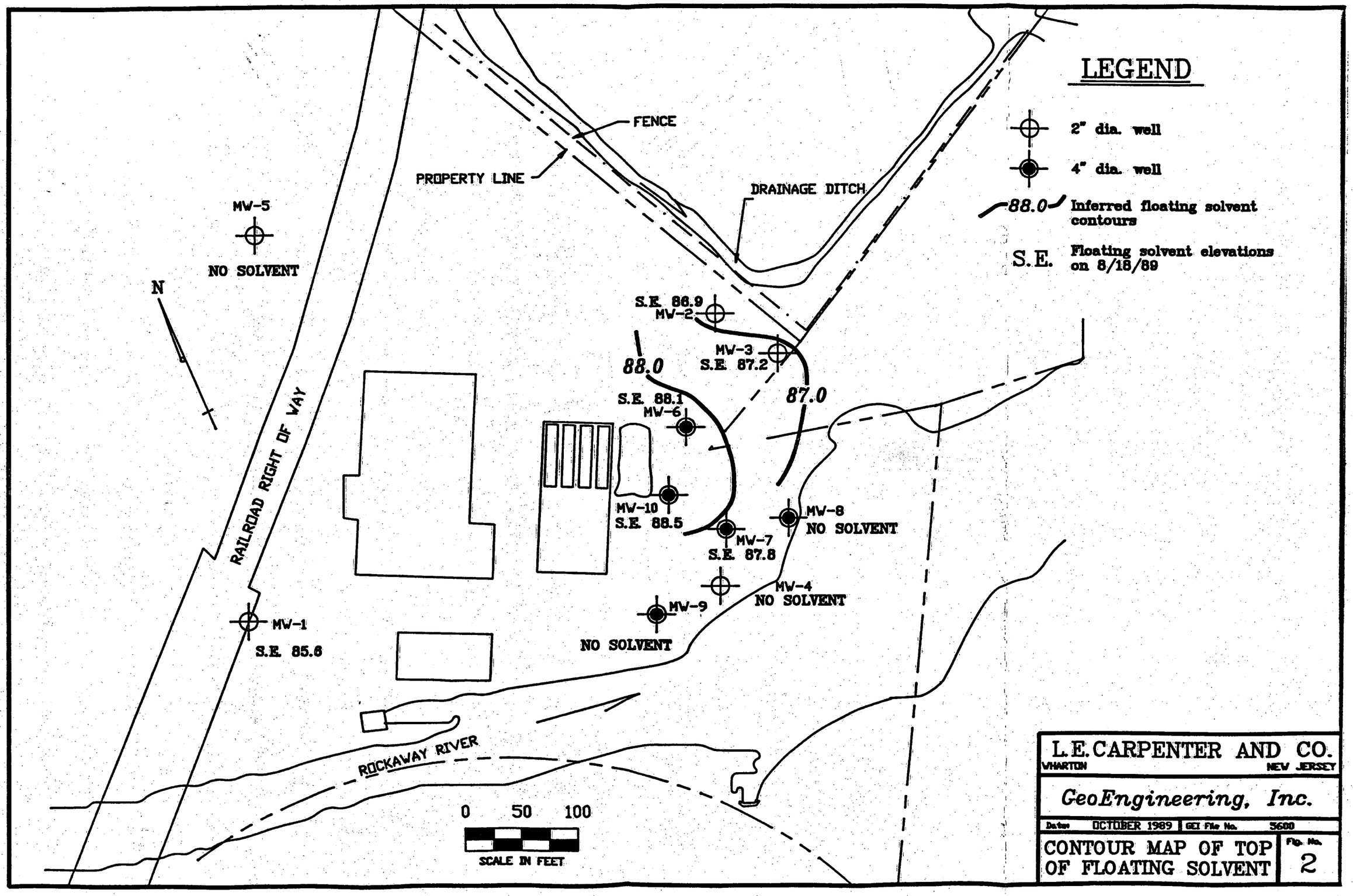
Fig. No. 3

TABLE A: SOLVENT THICKNESS AND PIEZOMETRIC ELEVATIONS ON 8/18/89

WELL NO.	PIEZOMETRIC SURFACE ELEVATION (feet above MSL)	FLOATING SOLVENT SURFACE ELEVATION (feet above MSL)	MEASURED SOLVENT THICKNESS IN MONITORING WELL (feet)	CALCULATED FLOATING SOLVENT THICKNESS (feet)
1	87.4 (1)	85.6	0.70	0.10
2	86.8 (1)	86.9	0.04	0.01
3	86.2 (1)	87.2	1.05	0.16
4	87.3 (3)	no solvent	0.00	0.00
5	87.3 (3)	no solvent	0.00	0.00
6	88.3 (2)	88.1	1.20	0.18
7	87.8 (2)	87.8	0.01	0.00
8	87.7 (3)	no solvent	0.00	0.00
9	88.9 (3)	no solvent	0.00	0.00
10	88.6 (2)	88.5	1.09	0.16
DRAINAGE DITCH	85.8			
RIVER PT.	89.9			
RIVER PT.	87.9			
RIVER PT.	86.5			

N O T E S (1) Depth to water measured inside GEOMON Groundwater Sampler/Piezometer (inlet screen is below solvent level)
(2) Calculated piezometric surface, assuming solvent specific gravity is 0.87.
(3) No solvent observed in monitoring well


LEGEND
2" dia. well
4" dia. well
88.0 Inferred water level contours
W.E. Water level elevations on 8/18/89
FENCE
PROPERTY LINE
DRAINAGE DITCH
W.E. 85.8
MW-5
W.E. 87.3
N
MW-2
W.E. 86.8
MW-3
W.E. 86.2
86.0
MW-6
W.E. 88.3
87.0
88.0
W.E. 86.5
RAILROAD RIGHT OF WAY
MW-10
W.E. 88.6
MW-8
W.E. 87.7
MW-7
W.E. 87.8
W.E. 87.9
MW-9
W.E. 88.9
MW-4
W.E. 87.3
MW-1
W.E. 87.4
W.E. 89.9
ROCKAWAY RIVER
0 50 100
SCALE IN FEET
L.E. CARPENTER AND CO.
WHARTON NEW JERSEY
GeoEngineering, Inc.
Date OCTOBER 1989
GEI File No. 5600
PIEZOMETRIC WATER LEVEL CONTOURS
Fig. No. 1



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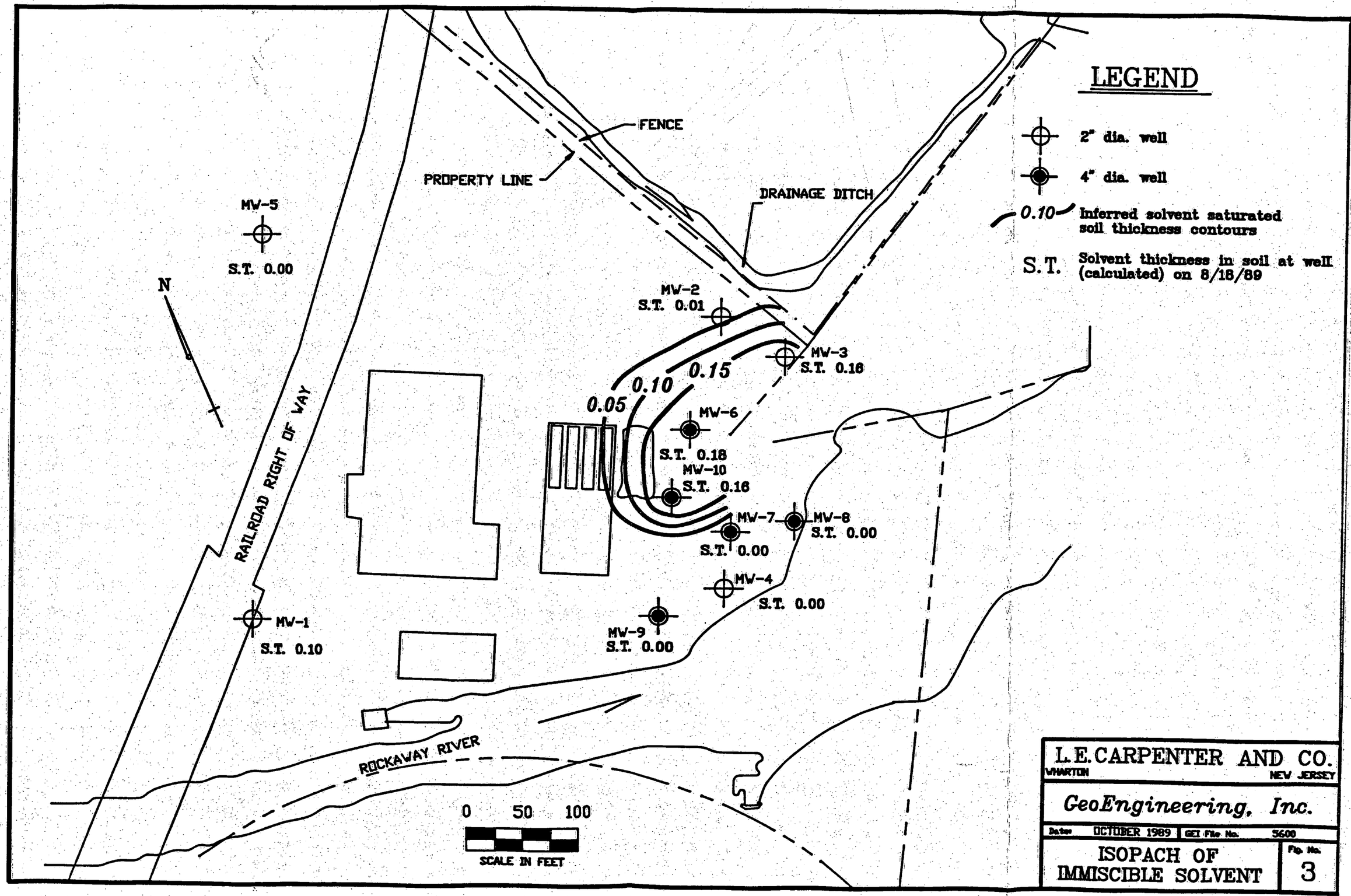
CONTOUR MAP OF TOP OF FLOATING SOLVENT

Fig. No. 2



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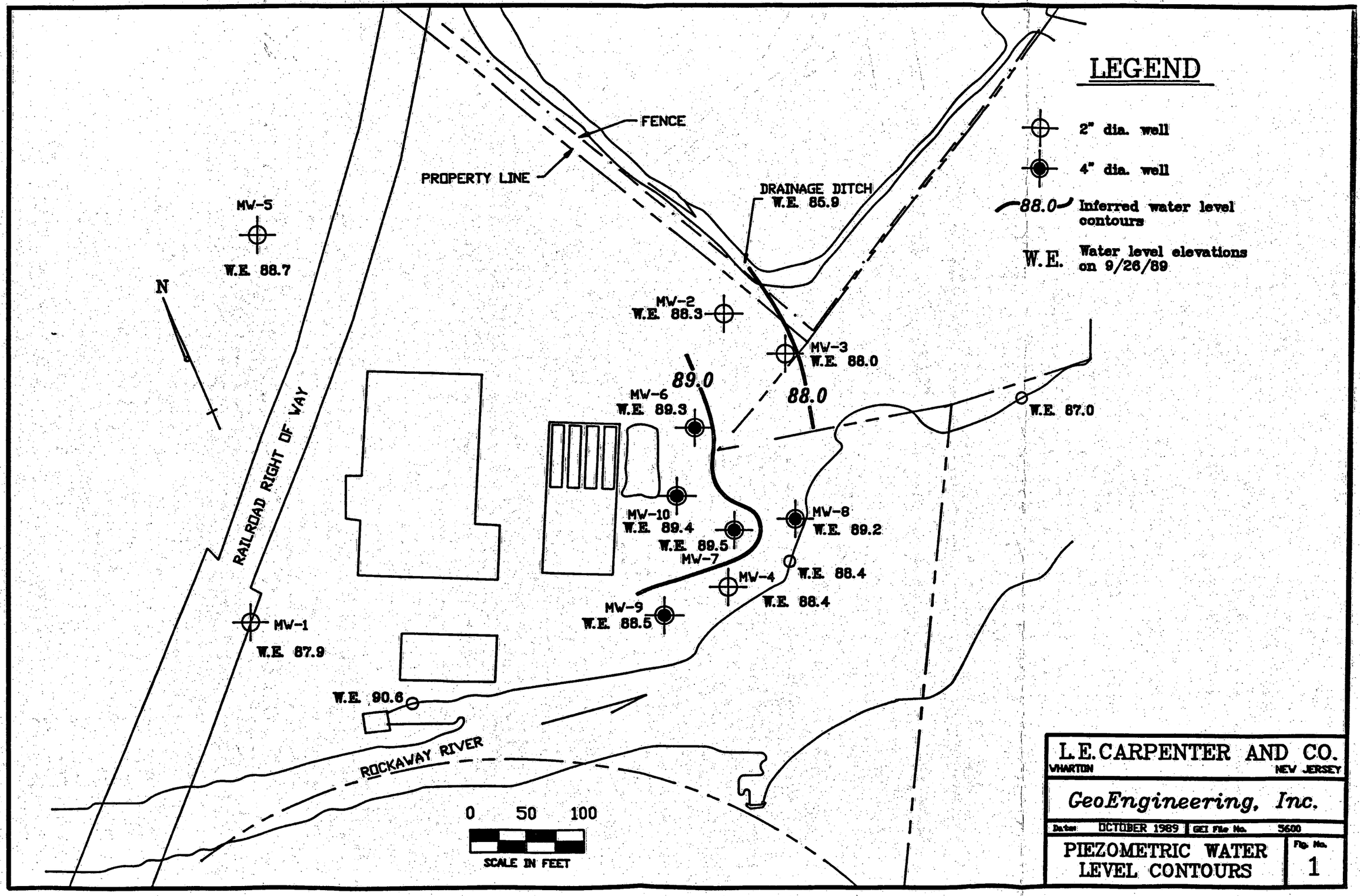
ISOPACH OF IMMISCIBLE SOLVENT

Fig. No. 3

TABLE A: SOLVENT THICKNESS AND PIEZOMETRIC ELEVATIONS ON 9/26/89

WELL NO.	PIEZOMETRIC SURFACE ELEVATION (feet above MSL)	FLOATING SOLVENT SURFACE ELEVATION (feet above MSL)	MEASURED SOLVENT THICKNESS IN MONITORING WELL (feet)	CALCULATED FLOATING SOLVENT THICKNESS (feet)
1	87.9 (1)	90.5	1.65	0.25
2	88.3 (1)	no solvent	0.00	0.00
3	88.0 (1)	88.5	1.35	0.20
4	88.4 (3)	no solvent	0.19	0.03
5	88.7 (3)	no solvent	0.00	0.00
6	89.3 (2)	89.1	1.72	0.26
7	89.5 (2)	no solvent	0.00	0.00
8	89.2 (3)	no solvent	0.00	0.00
9	88.5 (3)	no solvent	0.00	0.00
10	89.4 (2)	88.8	3.89	0.58
DRAINAGE DITCH	85.9			
RIVER PT.	90.6			
RIVER PT.	88.4			
RIVER PT.	87.0			

N O T E S (1) Depth to water measured inside GEOMON Groundwater Sampler/Piezometer (inlet screen is below solvent level)
(2) Calculated piezometric surface, assuming solvent specific gravity is 0.87.
(3) No solvent observed in monitoring well


LEGEND
2" dia. well
4" dia. well
88.0 Inferred water level contours
W.E. Water level elevations on 9/26/89
FENCE
PROPERTY LINE
DRAINAGE DITCH
W.E. 85.9
MW-5
W.E. 88.7
N
MW-2
W.E. 88.3
MW-3
W.E. 88.0
89.0
88.0
MW-6
W.E. 89.3
W.E. 87.0
MW-10
W.E. 89.4
MW-8
W.E. 89.2
W.E. 89.5
MW-7
MW-4
W.E. 88.4
W.E. 88.4
MW-9
W.E. 88.5
MW-1
W.E. 87.9
W.E. 90.6
RAILROAD RIGHT OF WAY
ROCKAWAY RIVER
0 50 100
SCALE IN FEET
L.E.CARPENTER AND CO.
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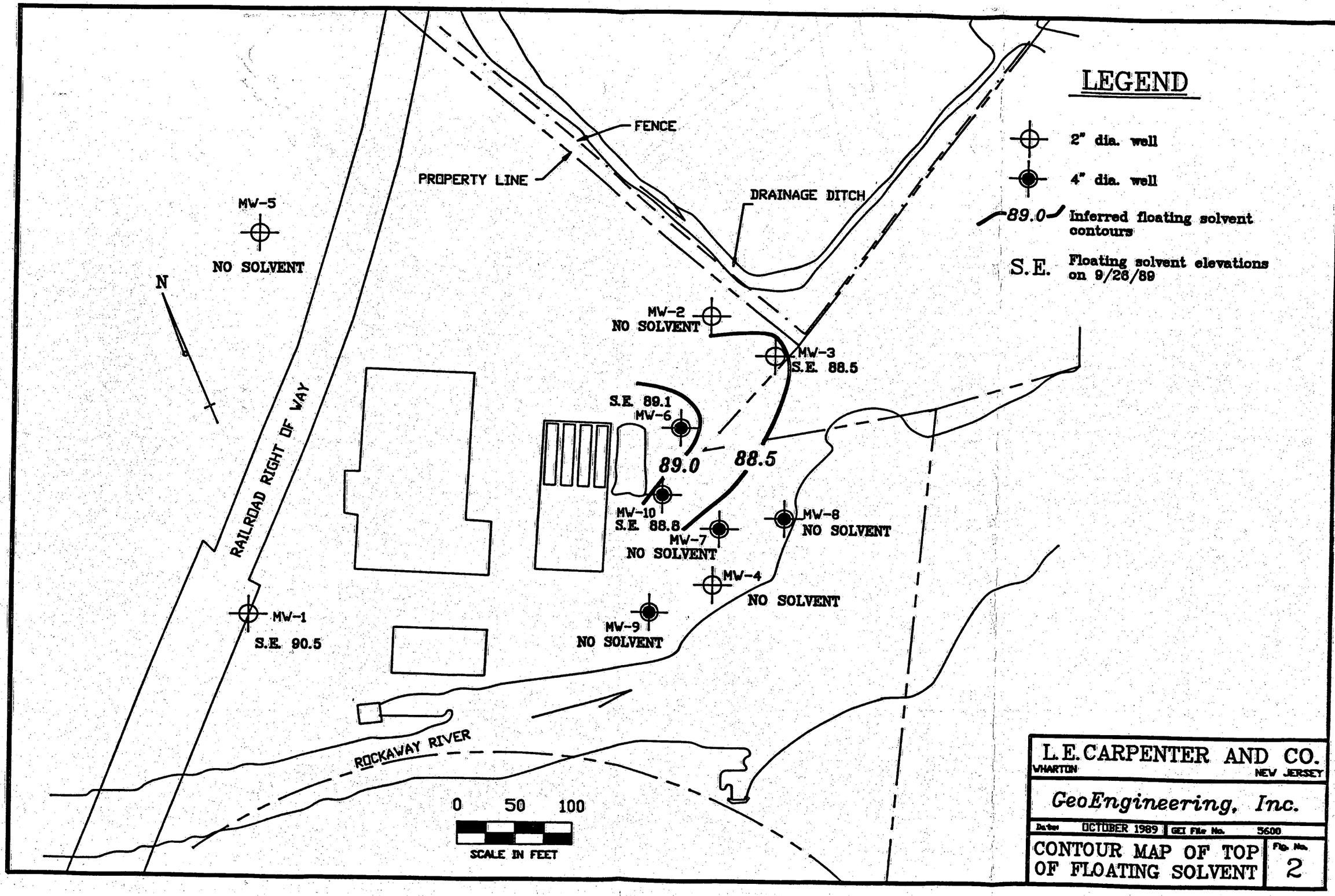
PIEZOMETRIC WATER LEVEL CONTOURS
Fig. No. 1


LEGEND
2" dia. well
4" dia. well
89.0 Inferred floating solvent contours
S.E. Floating solvent elevations on 9/26/89
FENCE
PROPERTY LINE
DRAINAGE DITCH
MW-5
NO SOLVENT
N
MW-2
NO SOLVENT
MW-3
S.E. 88.5
S.E. 89.1
MW-6
89.0
88.5
MW-10
S.E. 88.8
MW-7
NO SOLVENT
MW-8
NO SOLVENT
MW-4
NO SOLVENT
MW-1
S.E. 90.5
MW-9
NO SOLVENT
RAILROAD RIGHT OF WAY
ROCKAWAY RIVER
0 50 100
SCALE IN FEET
L.E. CARPENTER AND CO.
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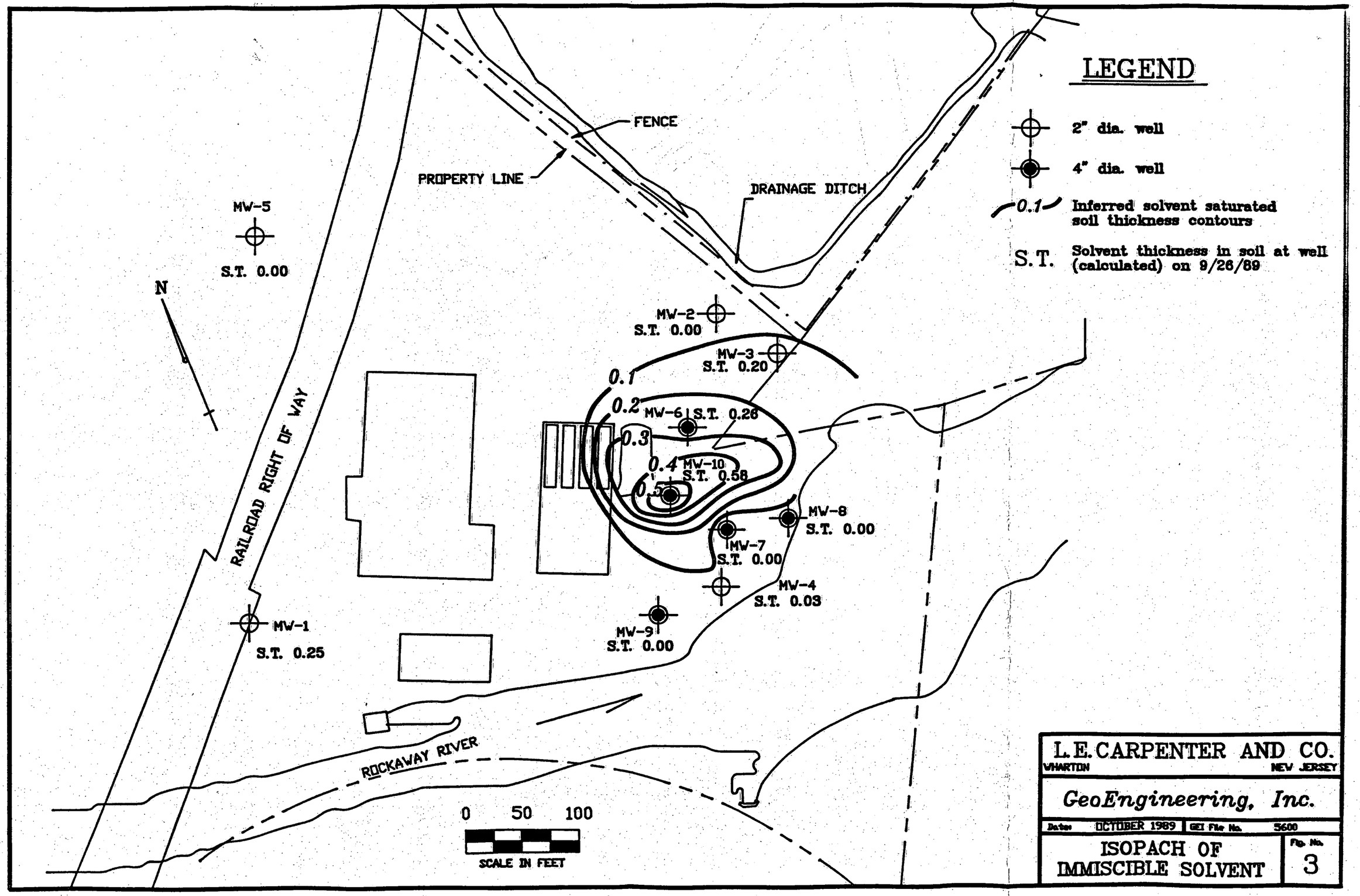
CONTOUR MAP OF TOP OF FLOATING SOLVENT
Fig. No. 2


FENCE
PROPERTY LINE
DRAINAGE DITCH
MW-5
S.T. 0.00
N
MW-2
S.T. 0.00
MW-3
S.T. 0.20
0.1
0.2
MW-6 S.T. 0.26
0.3
0.4
MW-10
S.T. 0.58
0.5
MW-8
S.T. 0.00
MW-7
S.T. 0.00
MW-4
S.T. 0.03
RAILROAD RIGHT OF WAY
MW-1
S.T. 0.25
MW-9
S.T. 0.00
ROCKAWAY RIVER
0 50 100
SCALE IN FEET
LEGEND
2" dia. well
4" dia. well
0.1 Inferred solvent saturated soil thickness contours
S.T. Solvent thickness in soil at well (calculated) on 9/26/89
L.E. CARPENTER AND CO.
WHARTON NEW JERSEY
GeoEngineering, Inc.
Date OCTOBER 1989
GEI File No. 5600
ISOPACH OF IMMISCIBLE SOLVENT
Fig. No. 3